

**Declaration of Antony Fields**  
**U.S.S.N. 10/081,569**

## **EXHIBIT 1 OF FIELDS DECLARATION**

## **Antony Fields**

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### **Experience**

#### **Emphasys Medical, Inc., Redwood City CA**

*Vice President of Research and Development*

7/00 – Present

Managing all research, development, quality and intellectual property activities for small venture funded medical device startup company focused on the development of novel, minimally invasive, devices for the treatment of emphysema and COPD. Joined as first employee prior to funding and incorporation.

#### **Reconstructive Technologies, Inc., Mountain View CA**

*Vice President of Engineering*

7/98 – 7/00

*Director of Engineering*

2/98 – 7/98

Managing all engineering management and development for small venture funded bio-technology startup company focused on the development of novel engineered human tissue replacement therapies. Company has no on-site CEO, so running of the company was performed in conjunction with Vice President of R&D. Achievements include:

- Designed or managed the development of 17 unique prototype devices
- Designed and managed the implementation of automated culture system that can run 48 experiments simultaneously
- Developed sophisticated automation control software and managed revision implementation
- Developed and managed modifications to process control and fluid perfusion system
- Jointly, along with the VP of R&D, performed the following:
  - Planned experiments and set research direction for company
  - Developed company structure and operation protocols
  - Managed all day to day activities of the company, including purchasing, hiring, bookkeeping and employee benefits
  - Presented company progress to Board of Directors every month
  - Recruited and interviewed all temporary and permanent employees during headcount increase from 3 to 14
  - Set salaries and stock options for all employees
  - Set all employee benefits and developed employee handbook
- Worked with outside patent counsel to manage patent portfolio and to prepare two utility patent submissions
- Hired, negotiated contracts with, and managed outside consultants in the following areas:
  - Mechanical Engineering
  - Market Research
  - Clinical Affairs
  - Regulatory Affairs
  - QA / QC
- Managed phone and computer network, and worked closely with outside network consultants
- Managed all outside fabrication vendors as well as in-house contract assemblers
- Purchased or organized leases for numerous pieces of capital equipment
- Tracked total company expenses and cash flow, and projected company burn rate
- Developed purchase order entry and tracking system

#### **IDEO Product Development, Palo Alto CA**

IDEO is a full service, turnkey product development consulting firm with seven offices in three countries providing development services in industries ranging from medical technology and office furniture to computers and consumer electronics. Firm grew from 50 employees to 350 during tenure.

**Experience  
(con't)**

**IDEO Product Development, Palo Alto CA (con't)**

*Engineering Studio Manager*

5/96 - 2/98

Managed group of 18 mechanical engineers, 3 student interns and one administrative assistant performing contract product development in many industries including medical diagnostics, medical disposables and resposables, surgical equipment, biotechnology, drug delivery systems, consumer electronics, computers, computer peripherals, office furniture, sporting goods, home appliances, and industrial equipment. Responsibilities included:

- Management of \$3 to \$4 million in revenue, responsibility for studio profit and loss
- Employee and intern recruiting, interviewing and hiring
- Employee career development, salary and bonus distribution
- All aspects of new business development
- Initial client meetings and proposal writing
- Project staffing and planning
- Contract development, project oversight, and maintenance of client contacts
- Design and project management reviews
- Employee design and project management mentorship

*Project Manager / Senior Project Manager*

6/91-4/96

Managed development effort and all aspects of client interaction on numerous development projects. Responsibilities included proposal writing, project budgeting, planning and scheduling, all client phone and written communication, design management and reviews, project staffing and coordination, conceptual design development, detailed mechanical design, report preparation and presentation, etc. Most projects involved management of multidisciplinary development, and thus responsible for management of mechanical, electrical, software and manufacturing engineers as well as human factors researchers, industrial designers and interaction designers. Projects managed include:

- Full turnkey development of Dade Behring PFA-100<sup>®</sup> Platelet Function Analyzer
- Advanced Tissue Science Transcyte<sup>™</sup> bioreactor
- Advanced Tissue Science Dermagraft<sup>™</sup> bioreactor and growth manifold
- Joint development of Bayer Diagnostics Clinitek<sup>®</sup> 500 Urine Chemistry Analyzer instrument
- System conceptual development and prototyping for new automated unanalysis instrument for Bayer Diagnostics
- Redesign of line of 3 pagers for AT&T
- Conceptual development and prototyping for advanced vacuum cleaner development
- Radio Frequency LAN Adapter for Alps USA
- Conceptual study and prototyping of line of office products for home workers
- Early development of in-flight trash compactor system for airlines

*Senior Mechanical Engineer / Project Manager*

4/90-6/91

Managed technical effort on project to co-develop Horizon<sup>®</sup> Nxt Modular Infusion System for McGaw Inc. (now B. Braun). Designed and patented flow stop mechanism that successfully avoided numerous competing patents. Organized activities of team of one industrial designer and five mechanical engineers, and managed interface with client. Product is currently best selling infusion pump on the market.

**Crystallume, Menlo Park, CA**

*Senior Mechanical Engineer*

6/89-4/90

Designed microwave and DC plasma powered research reactors for startup attempting to commercialize chemically vapor deposited diamond films. Developed manufacturing processes for laser cutting and polishing of grown diamond films. Performed thermal analyses and worked closely with process and materials engineers to optimize growth processes and parameters.

**Orasis, Inc., Oakland, CA**

*Mechanical Design Engineer*

1/89-3/89

Worked with small start-up company attempting to produce equipment for automated semiconductor inspection based on laser interferometry.

**Experience  
(con't)**

**Silicon Valley Group Inc., San Jose, CA**

*Mechanical Design Engineer*

*2/86-8/87, consulting 11/88-12/88*

Designed improvements to and debugged robotics on a five axis, automated silicon wafer handling system on a vertical thermal reactor. Solved extensive vibration and reliability problems in stepper motor driven axes through a combination of electrical, mechanical and control software changes. Project leader on machine redesign for 200mm wafers. Worked closely with sensors of all kinds, designed sensor interface algorithms and debugged sophisticated wafer edge calibration routines.

**Massachusetts Institute of Technology, Cambridge, MA**

*Research Assistant*

*9/84-12/85*

Worked with Prof. H Asada on the design and development of a flexible fixturing system for sheet metal airplane wing skins using a six axis IBM RS-1 Cartesian Robot.

**Spectra-Physics, San Jose, CA**

*Manufacturing Engineer*

*7/83-8/84*

Worked for the Industrial Laser Division and was responsible for designing tooling and assembly processes, solving production problems and correcting design errors on a 1500 watt microprocessor controlled metal working CO2 gas transport laser.

**Education**

**Imperial College of Science and Technology, University of London, London, England**

MSc degree in Control Systems, Department of Electrical Engineering, September 1988. Thesis under Prof. D Q Mayne on "The Dynamics and Control of a Two Fingered Robot Hand".

**Massachusetts Institute of Technology, Cambridge, MA**

M.S. degree in Mechanical Engineering, December 1985. Thesis under Prof. H Asada on "The Analysis and Design of a Flexible Robotic Fixturing and Drilling System". Designed award winning servoed robot gripper with internal camera for Automatix Inc. as part of course work.

**University of California, Berkeley, CA**

B.S. degree in Mechanical Engineering, June 1983. Concentration in Mechanical Design.

**Publications**

*Flexible Fixturing and Automatic Drilling of Sheet Metal Parts Using a Robot Manipulator*, A Fields, K Youcef-Toumi and H Asada, presented at the 1986 Japan-USA Symposium on Flexible Automation.

*Design of Flexible Fixtures Reconfigured By Robot Manipulators*, H Asada and A Fields, presented at the 1985 ASME Winter Annual Meeting.

**Patents**

Numerous utility patent applications in prosecution based on work at Emphasys Medical, Inc., three confidential utility patents currently under submission based on work at Reconstructive Technologies, Inc.,

5,437,635	Tube flow limiter, safety flow clip, and tube pincher mechanism
5,465,660	Aircraft trash collection and compacting apparatus
5,490,455	Aircraft trash collection and compacting apparatus
D346,172	Combination data converter and radio transmitter unit

**Skills**

- Extensive experience in both high and low volume manufacturing processes, procedures and documentation.
- Strong background in FDA requirements for medical product development.
- Proficient in MS Excel, Word, Powerpoint and Project, Win95/98/NT/2000/XP OS, SolidWorks, HP ME30/ME10.
- Strong electronics and embedded software background.
- Extensive machine shop and metal fabrication experience.

**Background**

Raised in San Francisco, California. Avid hiker, swimmer, and skier. Hobbies include furniture making and general woodworking, and life drawing.